
Abstract
Humans can recognise human body parts haptically as well as visually. We employed a mental-rotation task to determine whether participants could adopt a third-person perspective when judging the laterality of life-like human hands. Female participants adopted either a first-person or a third-person perspective using vision (experiment 1) or haptics (experiment 2), with hands presented at various orientations within a horizontal plane. In the first-person perspective task, most participants responded more slowly as hand orientation increasingly deviated from the participant's upright orientation, regardless of modality. In the visual third-person perspective task, most participants responded more slowly as hand orientation increasingly deviated from the experimenter's upright orientation; in contrast, less than half of the participants produced this same inverted U-shaped response-time function haptically. In experiment 3, participants were explicitly instructed to adopt a third-person perspective haptically by mentally rotating the rubber hand to the experimenter's upright orientation. Most participants produced an inverted U-shaped function. Collectively, these results suggest that humans can accurately assume a third-person perspective when hands are explored haptically or visually. With less explicit instructions, however, the canonical orientation for hand representation may be more strongly influenced haptically than visually by body-based heuristics, and less easily modified by perspective instructions.

See also “Haptic Face Processing”